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*Dr. Baird  
U. S. Nat. Mus. Washington*

REPORT

OF THE

GENERAL SUPERINTENDENT

TO

The Board of Directors

OF THE

PERUVIAN PETROLEUM COMPANY,

OF NEW YORK.

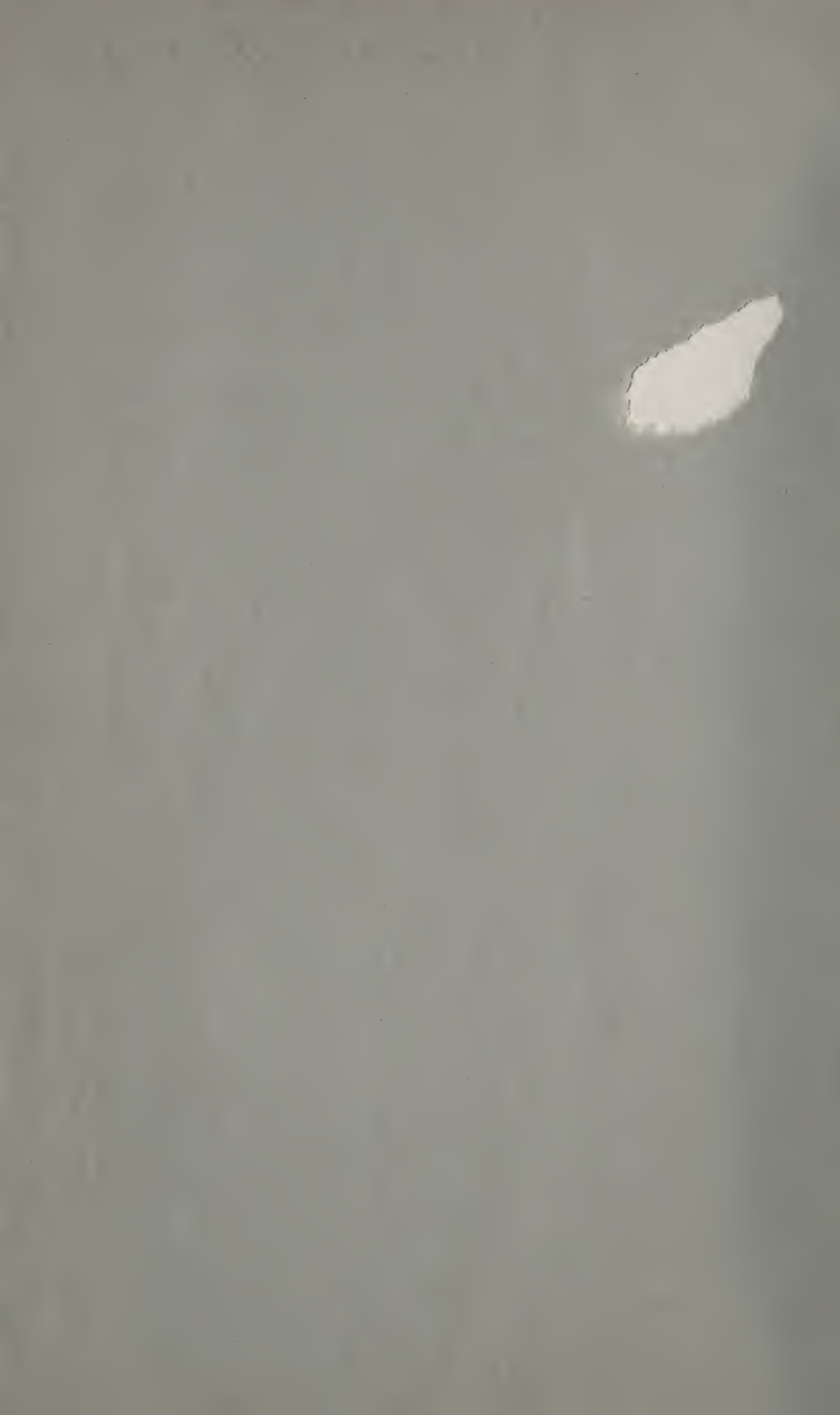
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NEW YORK :

L. H. BIGLOW & CO., PRINTERS & STATIONERS, No. 13 WILLIAM STREET.

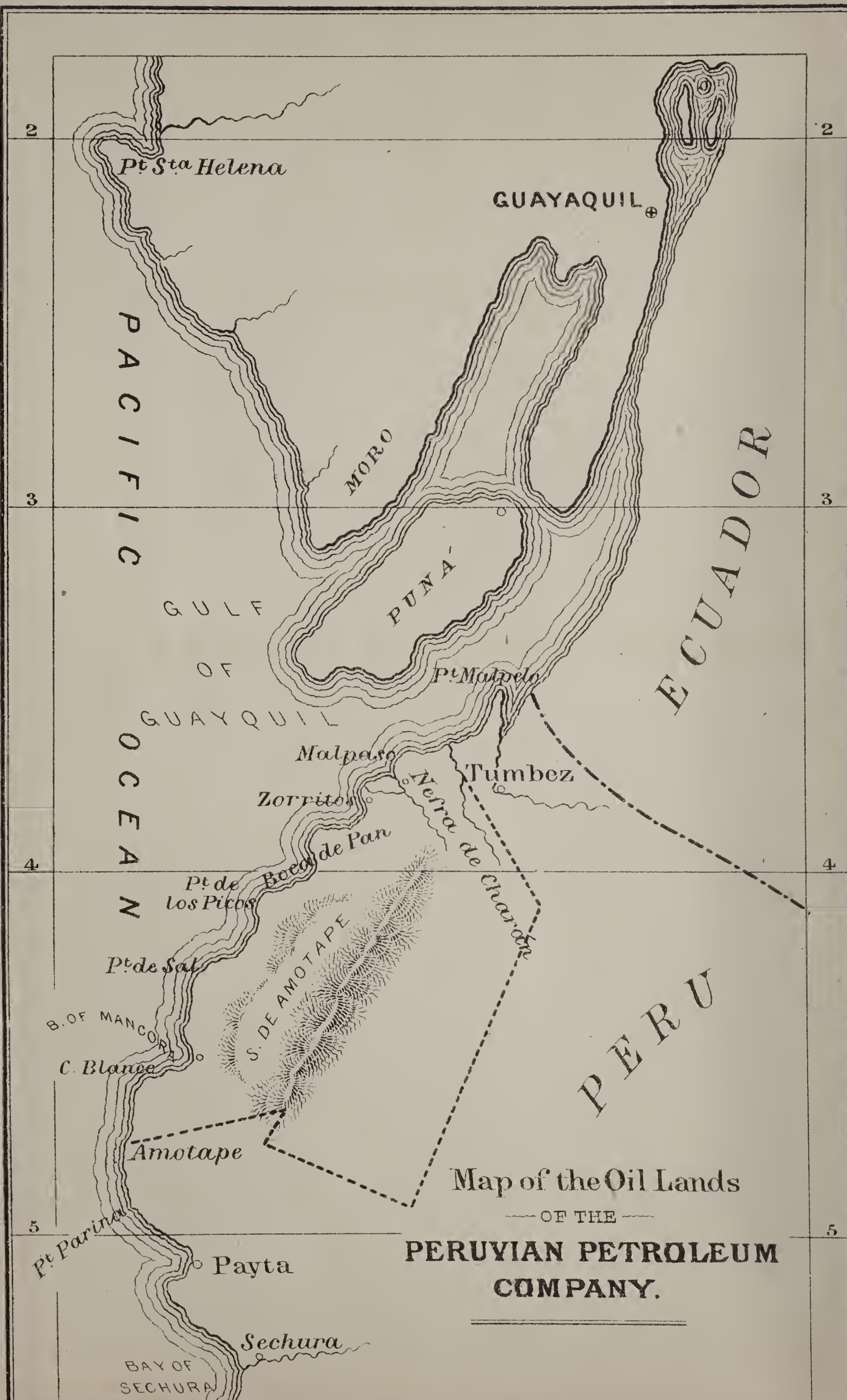
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1866.









# R E P O R T

OF THE

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OF NEW YORK.



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1866.

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# Compañía Peruana de Petroleo,

(THE PERUVIAN PETROLEUM CO.)

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CAPITAL, - - - - - \$5,000,000.

Shares \$100 each.

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## OFFICERS;

*President,* - - - GEO. H. BISSELL,  
*Vice-President,* - - JAMES BISHOP,  
*Treasurer,* - - - JAMES A. WILLIAMSON,  
*Secretary,* - - - J. Q. AYMAR WILLIAMSON,  
*Gen'l Superintend't,* ETHAN P. LARKIN.

## DIRECTORS,

GEO. H. BISSELL,	JAMES BISHOP,
ETHAN P. LARKIN,	JAMES A. WILLIAMSON,
J. Q. AYMAR WILLIAMSON,	JOHN P. HARDENBERGH,
ALEXANDER RUDEN.	

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OFFICE IN NEW YORK, - - NO. 3 BEAVER STREET,

**AND IN PERU,**

AT ZORRITOS, ON THE LANDS OF THE CO.

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**The Lands comprise over 4,000,000 Acres,**

Being the whole of the Estate of Mancora, and all the known Petroleum  
Property in South America.







ENDICOTT & CO. LITH. 59 BECKMAN ST. NEW YORK.

WORKS OF THE P. P. CO. AT ZORRITOS.





# REPORT.

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TO THE BOARD OF DIRECTORS OF THE "COMPAÑIA PERUANA DE PETROLEO" (*Peruvian Petroleum Company*):

GENTLEMEN:

The magnitude of your Oil Territory in South America, the increasing consumption of *refined Petroleum* in Peru, Chili and Ecuador, and the proximity to large foreign markets, have induced your Superintendent in his first report to describe more minutely than would have been otherwise necessary, the *geographical situation, geological character, and natural advantages and disadvantages* to be met with in developing the territory and conducting this grand enterprise to success.

These Oil Lands form the foot hills of the Cordillera from Cape Blanco to the low range that constitute the southern boundary of the Tumbez Valley. They begin at the "quebrada" de Charan, about ten miles south of the Tumbez River, and extend along the coast to a "quebrada" a little south of Cape Blanco—a distance of about forty leagues, and averaging about twenty leagues in width; thus giving an *area* of 800 *square leagues, equal to 7,200 square miles, or 4,408,000 acres.*

The northern portion of this vast tract, where the Company have commenced operations, is easily accessible to Tumbez, which is connected with Paita to the south and Guayaquil and Panama to the north, by *Steamers* three times a month, and through mails bring New York correspondence in sixteen days.

## CLIMATE.

The Company's works at Zorritos (about 20 miles to the south of the Tumbez River) are near the southern terminus of the Equatorial Rain Belt.



This *great Zone of perpetual rain* moves regularly north and south with the advancement and withdrawal of the *S. E. trade winds* and the variation of the seasons. Its southern margin oscillates between  $3^{\circ} 30' \text{ N.}$  and  $3^{\circ} \text{ S.}$ , giving alternately a rainy and a dry season.

At Zorritos it generally rains a few nights during the two winter months of January and February. Although at times, an interval of two or three years passes with scarcely a shower, on the other hand, the margin occasionally extends further to the south, enveloping Zorritos for three months in the tropical rains.

During the months of December, January, February and March of last year, there were occasional night-showers; but not a day were the regular operations of the Company interrupted by inclement weather.

The TEMPERATURE is milder than that of Guayaquil or even Tumbez—the thermometer rarely reaching  $85^{\circ} \text{ Fah't}$ ; and usually standing at from  $59^{\circ}$  to  $63^{\circ}$  through the night, and from  $67^{\circ}$  to  $78^{\circ}$  during the day.

Although so near the Equator, the S. E. Trades blowing fresh from the ocean for ten months, and north-westerly winds for the balance of the year, moderate the *temperature* to an agreeable coolness, and render the *climate decidedly healthy*.

THE COAST LINE is tortuous and has a general direction of S. by W., beginning at Puntó de Malpelo which forms the southern boundary of Tumbez Bay. From Malpelo Point to Charaú it presents the low, flat coast of Tumbez Valley. At La Cruz, near Charaú, there is a point projecting into the sea, another at Mal Paso Grande which forms with Mal Paso Chico an indifferent anchorage: the water is deep enough, but the small bay is somewhat exposed to south-westerns, and more so to northerners.

The next point forms the northern, as Puntó de Zorritos does the southern boundary of the Bay of Zorritos—a good harbor, where a ship can lie within a thousand feet of shore, in five fathoms, at low water. The next point of importance is Puntó de los Picos, at the south of “Boca de Pau,” another good harbor, and much frequented by vessels loading fire-wood for the Lima market.

Immediately north of Cape Blanco is the next bay and harbor

of importance, that of Mancora, which is well protected and adjacent to Cana Dulce, a locality of much interest to the Company on account of its "Brea" mines and *heavy* Petroleum.

When your Superintendent first landed at Mancora to examine these mines, he found a ship of a thousand tons in the harbor loading with fire-wood.

This whole region is rough, undulating and hilly. The hills crowd down almost to high-water mark, and increase in elevation, interspersed with valleys and "quebradas" from the shore to the Cordillera.

Following up the Tuciya Valley the grade was roughly estimated at one hundred feet to the mile; this would doubtless increase rapidly after passing the *foot hills*.

The surface is covered with variegated clays, green sands and fossiliferous conglomerates, consisting of gravel, pebbles and boulders, cemented together with lime or ferruginous clay or sand. From Mal Paso Grande, for more than a league to the south, the sea has encroached upon the hills, undermining them, so that in many places, they present a nearly perpendicular wall, exhibiting a sectional face of from 60 to 120 feet. The strata exposed by these cliffs, as well as by the "quebradas," where the torrent of the rainy season has cut away the hill-sides sometimes to the depth of from 60 to 80 feet, are for the most part *variegated clays*, red, white, yellow, purple, blue, green and brown; blue, red and brown *clay shales*; *dull-colored, friable sand-stones*, that readily disintegrate; *plates* and *layers* of *gypsum* interspersed between the layers of brown shale; beautiful specimens of selenite and clay iron ore, concretions of argillaceous and ferruginous sandstone, globular and ovoidal, of from one to five feet in diameter (found in the Valley of Tuciya); *fossiliferous lime rock*, sometimes crystallized; brown coal or lignite, as at Mal Paso Grande, where it crops out in a seam 18 inches thick, between the layers of brown shale; bituminous shale exhibiting specks of alum as a white powder; and sometimes layers of what appear to have been beach sand. Mr. A. E. PRENTICE, Civil Engineer of the Peruvian Government, says in his report upon this section:

"With the exception of the veins of calcareous sand-stone found near the surface, and an occasional fragment of a large marine bivalve in the grey sand, very



little lime is found until reaching a depth of from 70 to 80 feet, where it appears to change into, or alternate with strata of very compact, dry and indurated marl, of the same blueish grey color, with specks of carbonate of lime. The boring was stopped in this marly shale at 79 ft. 6 in. below the surface. It was subsequently ascertained that at Caritos, about ten leagues to the south, (S. E.,) in a district presenting the same external features, a well had been sunk to upwards of 250 feet, in indurated marl of the same description—which at a depth of 300 feet changed to a very compact, close grained, dark-grey (almost black) *clay slate*. The only other circumstances worth mentioning are the brine and brackish water springs, found every two or three leagues along the coast. A considerable deposit of rock salt which is found close to the surface at “Boca de Pau” two leagues to the S. W. A few leagues to the north-east of Zorritos, the hills assume a yellowish white appearance, and on the tops of some of these I have found deposits of conchoidal nodules of horn stone, or rather opaque, silicious stone, resembling flint, yellowish white on the outside, and dark brown inside, imbedded in a light-colored pulverulent marl.”

The general appearance of the coast from the sea, as you sail along the shore, is exceedingly barren and forbidding; but this aspect is somewhat relieved on a nearer view by the beautifully variegated colors which the hills present from their argillaceous deposits—sometimes yellow, then red and green, blue and violet or brown, as one or another clay predominates. During the winter season, for several months, the valleys are covered with grasses, wild flowers and a rich verdure, which creeps far up the hill-sides, presenting a refreshing and delightful aspect.

No fresh water is found near the shore, from the Tumbez River to the Chira at Colan. A little to the north of Paíta, more to the interior, the country is scantily watered, and susceptible of cultivation in the valleys, while the hills and mountains furnish rich pasturage.

Nearly all the valleys and many of the hills in the interior are wooded, indeed for many years, the “Hacienda de Mancora” has furnished a considerable portion of the fire-wood consumed in Lima. Algaroba is the principal wood, and resembles our honey locust, while harder and heavier; it is a bastard vanilla, producing a bean very nutritious and fattening to cattle. The wood has almost the gravity of water, very hard and of a dark brown color. There can be no better wood for steaming; it is better than dry hickory, making a hotter fire and burning longer. Placed beside the portable engine, this fuel costs six dollars per cord, and there is an abundance of it to develop the entire estate.



Your Superintendent having no facilities for properly examining and classifying the fossils discovered in sinking well No. 3, gives the following geological sketches with some hesitation, and wishes to remark, that he may find it necessary at a future day to correct some of the conclusions here expressed. It is doubtful whether any epoch of the carboniferous period is represented at all, and if not, the tertiary rests upon the *upper Devonian*:

### GEOLOGICAL CHARACTER.

The *western chain* of the Cordilleras, taking the “Vulcande Súngar” as a point of departure, trends rapidly to the westward, till a little to the S. W. of Cuenca, it approaches to the Pacific coast, here less than a hundred miles distant. This chain then pending to the south, follows the coast-line throughout almost the entire extent of Peru and Chili, leaving a narrow strip of lower lands at its base. The geological formation of the Cordilleras is mostly primary—granitic and porphuritic rocks. Gold is found near Cuenca on both slopes, in the sands of the streams and in the quartz veins.

On the surface of the upheaved and almost perpendicular cliffs at “Mal Paso Grande,” are found beds of oyster shells, belonging to existing species, varying from two to four feet in thickness, agglutinated into a coarse shell rock. *Thin layers of lignites, green sandy pearls*, and other remains of the eocene epoch of the tertiary period are found at intervals, for sixty miles along the coast to the south, and extending inland, as far as has been observed, from two to seven leagues.

*Immediately subjacent* to these relics of the *tertiary period*, are found what appear to be the shales, sand-stones and lime rock of the *subcarboniferous and upper Devonian periods*.

The Petroleiferous rocks of the region under consideration seem to be the chlorite sand-stones, which are mostly saturated with Oil, and the brown shales very friable, and whose layers are so loosely compacted as to admit the Oil to be forced through the fissures thus presented. It is where this rock has been exposed by the attrition of the sea, that the Oil trickles out at low tide.

This outcrop of Petroleum is first observed at “Mal Paso Chico,” and it can be traced, at intervals, to Cape Blanco, a dis-

tance of more than thirty leagues. A good example of Oil cropping out in sand rock is seen at a distance of two and half leagues from the sea, up the "Valle de Tuciyal," at a point marked upon the accompanying map. A subsequent reference will be made to the richness of the vein here indicated. The extent of the Petroleiferous rocks comprehends an *area of twenty leagues by seven*, from "Mal Paso" to "Caña Dulce," making 140 square leagues, or 806,400 acres. This does not include the region near Cape Blanco, which has not yet been examined.

## HISTORY OF THE DISCOVERY OF PETROLEUM ON THE ESTATE OF MANCORA.

For many years mines of Brea, Alquitran, Copé or Asphaltum, as the material has been variously denominated, have been known to exist, and have been worked at various points along the west coast of South America, in Chili, Peru and Ecuador. This Brea exists at Punta Santa Helena, in Ecuador, and at Caña Dulce, in the estate of Mancora, in two forms: on the surface it is the "Brea Piedra," Asphaltum—hard, of a lustrous surface where broken—a dark-brown color and conchoidal fracture. Below the surface, at various depths, there exudes from sides of pits, excavated for the purpose of collecting it, a black mineral tar, of a strong pitchy odor, iridescent, readily igniting and burning with a red smoky flame until entirely consumed: This is the "Brea Liquida," or Liquid Asphaltum, and is melted with the "Brea Piedra" to make a pitch for smearing the inner surface of Pisco jars and *potijas*, for the native wine and rum. This pitch, when thus prepared, is sold at from \$25 to \$30 per quintal, according to its quality. A Brea mine was opened several years ago by the proprietor of the estate of Mancora, at Caña Dulce, for the manufacture of Alquitran. As the outcrop of Petroleum, believed then to be the same with "Brea Liquida," had been observed on the shore from Cape Blanco to Mal Paso, the proprietor, in company with several other gentlemen, determined to open a "Brea mine" at Zorritos, where the outcrop seemed to indicate a large quantity of the material. A Scotchman, by the name of Fanier, took charge of this business, and commenced at Zorritos, where he opened some eight pits, varying from 20 to 30 feet in length, 7 to



15 in width, and sunk to a depth of from 17 to 30 feet. In most of these a surface Petroleum was obtained of a gravity varying from  $910^{\circ}$  to  $925^{\circ}$ , and in quantities varying from one to five buckets per day, from each pozo or pit.

It was found, however, that this Petroleum would not answer the purpose for which it was sought. As there was no Asphaltum or "Brea Piedra" in the vicinity, it would be necessary to evaporate the Petroleum until reduced to a thick tar; but the result proved to be entirely incommensurate with the labor and expense, as but a mere residue of tar was left, nearly the whole volume of Petroleum disappearing by evaporation. As there seemed to be no other use for the Petroleum, after considerable expense, with no remuneration, the enterprise was finally abandoned. In 1863, Mr. Alexander Ruden, of Paita, for many years the commercial agent of the estate of Mancora, and interested in the previous experiment, petitioned the Peruvian government to send Mr. A. E. Prentice, Government Civil Engineer, to examine the Petroleum mines of Mancora.

*This time* the object was *to extract Petroleum*, and the proprietor, with Mr. Ruden and several other gentlemen, proposed to form a company for that purpose. In accordance with Mr. Ruden's petition, Mr. Prentice was appointed on the 22d of September, and proceeded to Mancora, where he collected "peones" and materials for work, and commenced operations October 30th.

Fanier, after having abandoned the idea of making Alquitran, had collected and shipped to the Lima Gas Company about one hundred barrels of oil, to determine whether gas could be made from it more economically than from coal. Mr. Prentice was also engineer of the gas company, and it was hoped that the experiment would prove successful, and thus all the gas companies on the coast become purchasers of Petroleum. Mr. Prentice proceeded to open anew the "pozos" made by Fanier, and also, on the 2d of November, commenced boring a well from the bottom of "pozo" No. 4, which at that time contained 36 gallons of Petroleum of  $900^{\circ}$  gravity. The boring was continued with very imperfect tools and various success, until about the middle of November, when the well had reached to 79 feet 6 inches below the natural surface, and about 60 feet below the level of the sea.

The oil taken from this well stood at  $842^{\circ}$ —thermometer at  $84^{\circ}$ . While engaged in this enterprise, Mr. Prentice examined this section of the estate as thoroughly as the circumstances permitted, and gave the following GENERAL OPINION on its Petroleoferous character :

*“ The superficial deposits from which the oil has hitherto been taken appear to be only the overflowings of large subterranean deposits, which not being able to come directly to the surface, on account of the impermeable nature of the immediately subjacent strata, only at present find an outlet by taking a circuitous or zigzag course, or by following the thinning out of these impermeable strata, until meeting with the upper and more permeable beds of sand and loam. At Zorritos, where the wells were dug, these permeable beds are still covered by about 15 feet of impermeable variegated clays, which may account for the more liquid state of the oil found there, as compared with that found at the “ Brea,” (Caña Dulce) about 20 leagues distant south of Zorritos, and about 12 (7) leagues distant from the coast, where the oil bearing strata coming to the surface, the more liquid or volatile parts appear to have dried up or evaporated, leaving behind the thick tarry part, which is there collected into shallow trenches and boiled down to be sold as pitch. The beds of sandy loam from which the oil is taken being only slightly permeable—that is, only allowing the oil to filter or travel horizontally through it (?) at a very slow rate, only a very small continuous supply can be expected from it. After the small local accumulations around each well has been drained, still it is not likely to cease altogether for a very long time. If these, instead of having been made on the shore, where the oil-bearing strata crops out between high and low water mark, (which was the circumstance which first drew attention to the spot,) had been made a little way inland, the probability is that a better supply would have been found. The wells or pits dug at Zorritos were made uselessly large—24 to 36 feet and from 6 to 13 feet wide—so that the cost of the oil taken therefrom can form no criterion as to what its extraction would cost if the pits were made in a more economical and systematic manner. I have no doubt but that a very considerable supply might be obtained, although only counting upon the superficial strata at from one-fifth to one-fourth the former outlay. I also think that there is a considerable probability of finding a large continuous supply by persevering with the boring, even although the first few trials should not prove successful.”*

Two and a half leagues from the coast up the Tuciyal, where the oil bearing sand rock crops out as before described, a pozo was opened by Famiér, seven feet square on the surface, and on reaching a depth of 28 feet the Petroleum bubbled up like a boiling spring, the oil rising to 10 feet 6 inches from the bottom in a few hours, at which depth it stood when examined by Mr. Prentice, November 1st, 1863. This is probably the best surface show of Petroleum ever discovered. Mr. Prentice's report not proving so



favorable as was desired for obtaining large results without involving considerable capital, the organization of the company was never perfected, and nothing more was done with the Mancora Petroleum lands until September of the following year (1864), when a more careful survey of the land and a rough map of the coast at Zorritos and of Caña Dulce were made by your Superintendent. During the previous examinations and experiments, Mr. Ruden had sent specimens of the crude Petroleum both to England and the United States for analysis.

These analyses had proved very favorable, giving a small percentage of Benzine and but little residuum, while the illuminating oil amounted to about 70 per cent., and the lubricating oil to about 15 per cent., leaving only 15 per cent. for gasses, Benzine and residua. The analysis and specimens of the refined oil were obtained, and new specimens of the oil, collected and sealed up at the wells, were forwarded to New York for a fresh analysis, which was made, and fully confirmed the excellent character given to this Petroleum by the former analyses. Minutes of a contract were agreed to by Don Diego Lama, the proprietor of the estate, of a sufficiently favorable character to warrant the organization of a company.

The more important considerations which led to the organization of the Compañia Peruana de Petroleo were doubtless the following :

*First.*—Petroleum had been found in considerable quantity, and the extent and geological character of the territory seemed to indicate the existence of large quantities and reservoirs in store, waiting to be developed and utilized by enterprise and capital.

There is one geological characteristic which has been reserved for present consideration, and that is the *Dip of the Rock*. Numerous volcanic disturbances have here and there bent and distorted the strata in almost every direction, but for leagues along the coast, and in every “quebrada” inland, the strata are seen to dip uniformly, when otherwise undisturbed, to the south-east, at an angle varying in different localities from  $15^{\circ}$  to  $40^{\circ}$ .

As the strata are tilted up *towards the coast*, and under the sea, their edges, exposed by removal of the debris, furnish the remark-

able outcrop of Petroleum before mentioned, and, what is of more importance, *prove that it must have come from a great depth, pressed up between the strata to the surface by its accompanying gasses.* Thus, it was observed in all the pits that were dug that the Petroleum flowed in from the lower, or south-east side; and by taking the outcrop upon the shore and tracing it, according to the angle of the dip, back along the strata to a well, it was found that the depth at which the vein would be struck could be calculated with great precision.

*Second.*—Peru, where the territory is located, furnishes a ready home market for a large quantity of refined Petroleum.

In March, 1861, the first gallon of refined Petroleum introduced into the country for public use was exposed for sale in the city of Callao; and now the annual consumption reaches to a million of gallons, and if Chili and Ecuador be included, it will increase the amount to a million and a half. All this is brought from the United States, and has to pay a revenue duty, amounting in Peru to twenty-five cents per gallon. The amount of the article consumed is rapidly increasing, and this would no doubt continue for several years could the price be reduced so as to extend its use to the poorer classes. Australia is within forty-five days by sail, with the constant *south-east trades* for the return passage as well. The Australasian British colonies consume more than three millions gallons of refined Petroleum annually, almost all of which is imported from the United States.

*Third.*—To say nothing of California and Oregon, which are convenient markets should they not succeed in supplying their own Petroleum, it is a principal consideration that this territory lies stretched for ninety miles along a coast indented with good harbors, where the Petroleum can be produced and shipped at the least possible expense. The wells already sunk are within 200 feet of high water mark, thus avoiding all expense of land carriage, so that the oil produced by these wells, or any others similarly located on the coast, can be furnished to the London or Liverpool market for less than half the expense of the Pennsylvania oil. This fact opens the European markets to the products of this territory. The company has been assured that, as soon as a constant supply of oil can be produced to warrant the under-



taking, a line of iron ships, with large iron tanks to carry the oil in bulk, will be built for this trade. Such were the considerations on which the company was organized. Two points remained to be settled by actual experiment upon the ground to warrant the expenditure of the large capital necessary for the development of the territory—the *cost of producing the oil*, and *the quantity that could be obtained*. In order to settle these questions, a prospecting party were sent out from New York, in August, 1865, with a single engine and two sets of drilling tools. The party arrived in September. Everything had to be made and prepared *de novo*. The party lived under an old shed upon the beach until the men's quarters and store house could be built; then grounds were leveled, derrick built, and on the 30th of October drilling commenced. Various strata of *clay shales*, *sand stones*, and conglomerates, varying from three inches to two feet in thickness, were passed through down to 56 feet 6 inches, where a small vein of salt water was struck, and at 70 feet, in loose conglomerate, the first considerable vein of oil and gas was met with. In the alternate layers of sand shale and conglomerate, small veins of oil continued to be encountered every few feet. These were not crevices, but like the small veins found in sinking a well for water. From 107 to 114 feet the gas and oil improved rapidly, and it was thought best to tube and test the well. Tubing was accordingly put down to 111 feet, and, after exhausting the water, the well pumped at the rate of a little more than two barrels per hour for forty hours; but as no tankage had been prepared in advance, it was thought best to sink the well deeper, with the hope of finding a large crevice and a flowing well. It would be difficult to say how many good wells have been spoiled by not letting well enough alone. At 190 feet a mud vein was struck, which filled the well to within 70 feet of the surface, and so No. 1 was lost. Well No. 2 was commenced about the 20th of December, and passed down through a somewhat firmer rock, although of the same general character, excepting that but little conglomerate was found. The same oil bearing strata were encountered as in No. 1.

No oil was found between 110 and 160 feet, but from 160 to 185 feet there was a good show. At 185 feet, the rock growing

soft, drilling was suspended and the well tubed to 177 feet. No. 2 has pumped and flowed alternately ever since, averaging about 25 barrels per day. It has not diminished in quantity, and it is only necessary to pump it 2 hours daily.

Well No. 2 was put down at a distance of about 100 feet from No. 1, and No. 3 was commenced at 113 feet from No. 2, along the coast line. In this well the upper veins were more abundant, and at 56 feet, four barrels a day could be dipped off regularly with the sand pump. From 56 feet to 132 feet no oil was found; but from 132 feet to 422 feet a good show of oil and gas was almost constantly met.

From 422 to 463 feet hard lime rock was encountered, gradually growing softer and more argillaceous, and finally changing to a loose bituminous shale, with an excellent show of gas and oil. This continued, gradually increasing to 526 feet, where an oil crevice of a foot in depth was struck. The well was put down to 531 feet and then tubed and tested.

It proved a great misfortune that the only spare pump barrel was seriously damaged by being bulged in the middle; the packing that fitted the middle of the barrel was too tight for the ends and would strip off, and when properly packed for the ends, it was too loose for the middle. There were no facilities at hand to remedy this defect satisfactorily; but after drawing tubing five times, the pump worked indifferently for several hours with the following result: Four hours were spent in exhausting mud and water when the well commenced pumping and flowing Oil, at the rate of 480 barrels per day; this continued until the packing came off and stopped everything. In drawing tubing, at 250 feet from the bottom, the bore-chip, which caused the difficulty, shook loose, and the well commenced flowing in a stream the full size of a two inch pipe, which continued, although the seed bag had been drawn, until the last length of tubing was withdrawn from the well.

After the tubing had been removed, it was determined to drill the well to 550 feet, to allow ample space for the chips and debris of boring to settle below the crevice. In attempting to accomplish this object, the tools became fast in the well, and every effort to remove them has thus far proved unsuccessful.



Well No. 4 has been commenced a short distance from No. 3, and was down to 109 feet Oct. 27, with a show of Oil and Gas, corresponding thus far with No. 3. The accident to No. 3 disappointed the expectations, but did not discourage the efforts of the Company.

The results of the last year's prospecting have convinced the Company of the great extent and permanency of the Petroleum deposits, and that wells can be bored and pumped as cheaply on the estate of Mancora as in Venango Co., Pennsylvania, while extensive markets are waiting to purchase the Oil as soon as produced.

With these views the Company has secured the services of Mr. Geo. E. Corey, (a man of extensive experience in putting down wells in Pennsylvania, and under whose supervision, as chief borer, the prospecting of the last year was conducted), and has supplied a corps of experienced workmen.

Three additional engines have been purchased, a small steamer built for supplying water and provisions to the works, and a bulk boat for loading and discharging cargo; also, 8,000 barrels of iron tankage and all tubing and machinery necessary to secure the complete success of the enterprise have been provided.

The Mancora Oil territory has been carefully examined by men familiar with the Pennsylvania Oil lands. Mr. Corey has sunk successfully more than sixty wells in the best Oil lands in the United States, and your Superintendent made a careful examination of the Oil Creek territory before securing the contract for the Mancora estate; and it is his deliberate opinion, as well as that of Mr. Corey and of every other practical man who is thoroughly acquainted with both localities, that were both to-day virgin territories—untouched by the drill, the Mancora estate has a *better show, a greater extent, a more favorable location to supply the great marts of the world, and a better prospect for a large and constant yield of Oil, than the entire Pennsylvania Oil Region.* It only remains to demonstrate the correctness of these views by the actual development of the P. P. Co.'s Oil Lands.

It is confidently hoped that before the time for another annual report shall arrive, your Superintendent will be able to lay before you results that shall satisfy every reasonable expectation.

I have the honor to be,

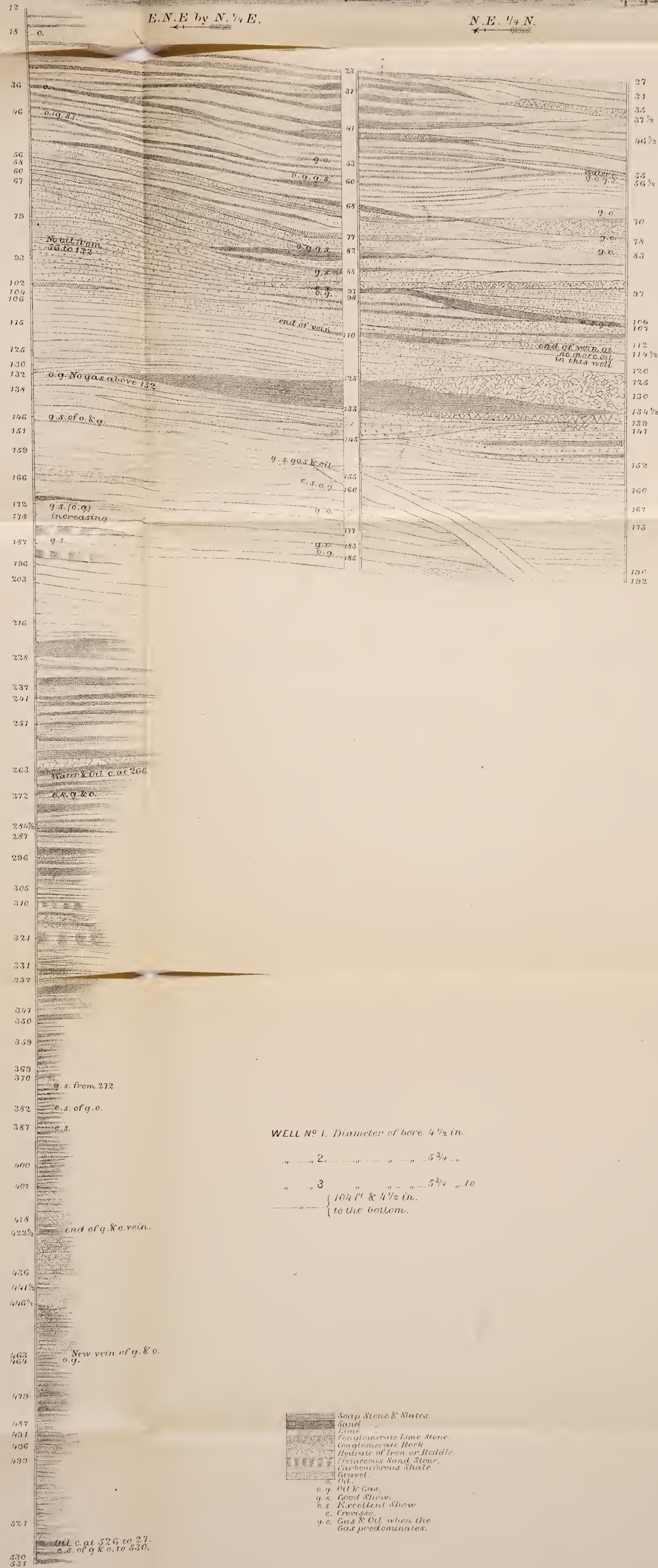
Very respectfully,

Your obed't servant,

E. P. LARKIN,

*General Sup't.*



















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